



Why slope is constant

GRADE 8 MATH

Name _____

Date _____

Show your working. Sketch a triangle under the line where it helps.

WORKED EXAMPLE

One line, one slope — similar triangles. $y = mx + b$: m tilts, b shifts.

1. Find the slope of $y = 5x - 2$ using $(0, -2)$ and $(2, 8)$.

FLUENCY

Show your thinking

Answer

2. Now find it using $(1, 3)$ and $(4, 18)$. Should it match?

APPLICATION

Show your thinking

Answer

3. State the slope and y-intercept of $y = -2x + 6$.

FLUENCY

Show your thinking

Answer

4. Explain, using similar triangles, why any two points on a line give the same slope.

REASONING

Show your thinking

Answer

5. A line through the origin passes through (4,12). Write its equation.

APPLICATION

Show your thinking

Answer

6. A line has slope 3 and crosses the y-axis at -4 . Write its equation.

APPLICATION

Show your thinking

Answer

7. Which of $y = 2x + 5$ and $y = 5x + 2$ is steeper? Explain.

REASONING

Show your thinking

Answer

8. Are $y = 3x + 1$ and $y = 3x + 1$ the same line? What about $y = 3x + 1$ and $y = 1 + 3x$?

REASONING

Show your thinking

Answer

9. Why is $y = 2x + 3$ NOT a proportional relationship, even though it is a straight line?

REASONING

Show your thinking

Answer